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10/821,791	04/09/2004	Chaitanya Kodeboyina	1014-086US01/JNP-0374	9340
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SHUMAKER & SIEFFERT, P.A. 1625 RADIO DRIVE , SUITE 300 WOODBURY, MN 55125			EXAMINER LAI, MICHAEL C	
			ART UNIT 2157	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/821,791	Applicant(s) KODEBOYINA, CHAITANYA	
	Examiner MICHAEL C. LAI	Art Unit 2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/16/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to communication filed on 4/9/2004. Claims 1-37 have been examined

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).
Correction of the following is required: There is no description of the medium in the specification. Applicant has failed to provide antecedent basis for the claim terminology "computer-readable medium" in claim 34.

Claim Objections

3. Claim 17 is objected to because of the following informalities: In line 1, "method" should be "device". Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 12-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
6. Each of the claimed pieces (routing process and L2 service) of claim 12 is just software. The claim is software per se based on the disclosure (see paragraph

0010) since such claim lacking “hardware.” Claims 13-23 depend on claim 12.

The claims are being rejected as non-statutory as directed to a form of software rather than a patent-eligible machine, manufacture, process or composition of matter.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1, 2, 6, and 10 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant’s admitted prior art (“AAPA”), specifically in view of the prior art presented in the Background section of Applicant’s Specification.

Regarding claim 1, AAPA discloses a method comprising:

establishing a label switched path (LSP) through one or more intermediate networks communicatively coupled between a first customer network and a second customer network [para. 0003, lines 8 -11];

communicating layer two (L2) service information using a first routing protocol between a first device associated with the first customer network and a second device associated with the second customer network [para. 0003, lines 1-5]; and

providing an L2 service in accordance with the L2 service information to transport L2 communications between the first customer network and the

second customer network through the one or more intermediate networks using the LSP [para. 0004].

Regarding claim 2, AAPA further discloses wherein establishing an LSP comprises exchanging label information associated with the LSP between the one or more intermediate networks using a second routing protocol [para. 0003, lines 5-8, MPLS protocols].

Regarding claim 6, AAPA further discloses wherein the label information conforms to one of Multi-protocol Label Switching (MPLS) or the Label Distribution Protocol (LDP) [para. 0003, lines 5-8].

Regarding claim 10, AAPA further discloses wherein the L2 service comprises the Virtual Private LAN Service [para. 0004, lines 1-4] and the L2 communications comprise Ethernet communications [para. 0004, lines 4-5].

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 5-9, 11-14, 16-20, 22-26, 28-31, and 33-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Sanderson et al. (US 20040223500 A1, hereinafter Sanderson).

Regarding claim 1, Sanderson discloses a method comprising:

establishing a label switched path (LSP) through one or more intermediate networks communicatively coupled between a first customer network and a second customer network [para. 0133, 0137];

communicating layer two (L2) service information using a first routing protocol between a first device associated with the first customer network and a second device associated with the second customer network [para. 0135-0136]; and

providing an L2 service in accordance with the L2 service information to transport L2 communications between the first customer network and the second customer network through the one or more intermediate networks using the LSP [para. 0162].

Regarding claim 2, Sanderson further discloses wherein establishing an LSP comprises exchanging label information associated with the LSP between the one or more intermediate networks using a second routing protocol [para. 0135-0140, BGP].

Regarding claim 3, Sanderson further discloses wherein the second routing protocol carries the label information in association with routes advertised between the intermediate networks [para. 0088].

Regarding claim 5, Sanderson further discloses wherein the second routing protocol comprises the Border Gateway Protocol (BGP) [para. 0135-0140, BGP].

Regarding claim 6, Sanderson further discloses wherein the label information conforms to one of Multi-protocol Label Switching (MPLS) or the Label Distribution Protocol (LDP) [para. 0165].

Regarding claim 7, Sanderson further discloses wherein the first routing protocol is the same as the second routing protocol [para. 0135-00140, EBGp, IBGP].

Regarding claim 8, Sanderson further discloses communicating L2 service information using a first routing protocol comprises communicating the L2 service information between the first device and the second device using an exterior routing protocol [para. 0090, EBGp].

Regarding claim 9, Sanderson further discloses:

wherein communicating L2 service information comprises communicating the L2 service information using an intermediate route relay device [para. 0079, PE routers],

wherein the L2 service information includes information for L2 sites or end-points within the second customer network and next hop information used to reach these L2 sites or end-points from the first customer network [para. 0168-0169], and

wherein the method includes configuring the intermediate route relay device to maintain and relay the next hop information unchanged via the exterior routing protocol [para. 0155].

Regarding claim 11, Sanderson further discloses wherein providing an L2 service comprises:

- receiving L2 communications from the first customer network [para. 0139, ingress LSP]; and

- assigning labels to the L2 communications from the first customer network in accordance with the label information to form packets for transporting the L2 communications from the first customer network to the second customer network [para. 0139, inner label].

Regarding claim 12, Sanderson discloses a device comprising:

- a routing process that receives label information for a label switched path (LSP) through one or more intermediate networks communicatively coupled between a first customer network and a second customer network [para. 0133, 0137];

- a layer two (L2) service that receives L2 service information associated with the second customer network using a first routing protocol [para. 0135-0136], and transports L2 communications between the first customer network and the second customer network through the one or more intermediate networks in accordance with the label information [para. 0162].

Regarding claim 13, Sanderson further discloses wherein the routing process receives the label information through the one or more intermediate networks via a second routing protocol [para. 0135-0140, BGP].

Regarding claim 14, Sanderson further discloses wherein the second routing protocol carries the label information in association with routes advertised between the one or more intermediate networks [para. 0088].

Regarding claim 16, Sanderson further discloses wherein the second routing protocol comprises the Border Gateway Protocol (BGP) [para. 0135-0140, BGP].

Regarding claim 17, Sanderson further discloses wherein the first routing protocol is the same as the second routing protocol [para. 0135-00140, EBGp, IBGP].

Regarding claim 18, Sanderson further discloses wherein the label information conforms to one of Multi-protocol Label Switching (MPLS) or the Label Distribution Protocol (LDP) [para. 0165].

Regarding claim 19, Sanderson further discloses wherein the device receives the L2 service information from a second device associated with the second customer network via an exterior routing protocol [para. 0090, EBGp].

Regarding claim 20, Sanderson further discloses:

wherein the L2 service information includes information for L2 sites or end-points in the second customer network and next hop information used by the device to reach these remote L2 sites or end-points [para. 0079, PE routers],

wherein the device is configured relay the next hop information unchanged using the exterior routing protocol when the device receives the L2 service information and the next hop information via an intermediate route relay device [para. 0155, 0168-0169].

Regarding claim 22, Sanderson further discloses wherein the L2 service receives L2 communications from the first customer network [para. 0139, ingress LSP], and assigns labels to the L2 communications from the first customer network in accordance with the label information to form packets for transporting the L2 communications from the first customer network to the second customer network through the one or more intermediate networks via the LSP [para. 0139, inner label].

Regarding claim 23, Sanderson further discloses wherein the device comprises a provider edge router or a customer edge router [para. 0133, 0137].

Regarding claim 24, Sanderson discloses a system comprising:

- a border router that establishes a label switched path (LSP) through one or more intermediate networks, wherein the LSP communicatively couples a first customer network and a second customer network [para. 0133, 0137];

- a first route reflector associated with the first customer network that communicates layer two (L2) service information with a second route reflector associated with the second customer network [para. 0135-0136]; and

an edge router that provides an L2 service to the first customer network in accordance with the L2 service information to transport L2 communications between the first customer network and the second customer network through the one or more intermediate networks using the LSP [para. 0162].

Regarding claim 25, Sanderson further discloses wherein the border router establishes the LSP by exchanging label information associated with the LSP between the one or more intermediate networks using a routing protocol [para. 0135-0140, BGP].

Regarding claim 26, Sanderson further discloses wherein the routing protocol has been redefined to carry the label information in association with routes advertised between the intermediate networks [para. 0088].

Regarding claim 28, Sanderson further discloses wherein the routing protocol comprises the Border Gateway Protocol (BGP) [para. 0135-0140, BGP].

Regarding claim 29, Sanderson further discloses wherein the label information conforms to one of Multi-protocol Label Switching (MPLS) or the Label Distribution Protocol (LDP) [para. 0165].

Regarding claim 30, Sanderson further discloses wherein the first route reflector communicates the L2 service information with the second route reflector via an exterior routing protocol [para. 0090, EBGp].

Regarding claim 31, Sanderson further discloses:

wherein the L2 service information specifies one or more L2 sites or end-points in the second customer network and includes next hop information used to reach these L2 sites or end-points from the first customer network [para. 0079, PE routers],

wherein the first and second route reflectors are configured to maintain and relay the next hop information unchanged upon receiving the next hop information via the exterior routing protocol [para. 0155, 0168-0169].

Regarding claim 33, Sanderson further discloses wherein the edge router provides an L2 service by receiving L2 communications from the first customer network [para. 0139, ingress LSP], and assigning labels to the L2 communications from the first customer network in accordance with the label information to form packets for transporting the L2 communications from the first customer network to the second customer network through the one or more intermediate networks via the LSP [para. 0139, inner label].

Regarding claim 34, Sanderson discloses a computer-readable medium comprising instructions to cause a processor to:

execute a routing process that receives label information for a label switched path (LSP) through one or more intermediate networks communicatively coupled between a first customer network and a second customer network [para. 0133, 0137]; and

execute a layer two (L2) service that receives L2 service information associated with the second customer network using a first routing protocol [para. 0135-0136], and transports L2 communications between the first customer network and the second customer network through the one or more intermediate networks in accordance with the label information [para. 0162].

Regarding claim 35, Sanderson further discloses

wherein the routing process receives the label information through the one or more intermediate networks via a second routing protocol [para. 0135-0140, BGP], and

wherein the second routing protocol carries the label information in association with routes advertised between the one or more intermediate networks [para. 0088].

Regarding claim 36, Sanderson further discloses wherein the second routing protocol comprises the Border Gateway Protocol (BGP) [para. 0135-0140, BGP].

Regarding claim 37, Sanderson further discloses wherein the first routing protocol is the same as the second routing protocol [para. 0135-00140, EBGp, IBGP].

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4, 15, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson as applied to claim 1, and in view of Bragg (US 7,286,479 B2, hereinafter Bragg).

Regarding claims 4, 15, and 27, Sanderson discloses the claimed invention except for the network layer reachability information (NLRI). Bragg teaches exchange of network level reachability information (NLRI) encoded as address prefixes [col. 1, lines 26-33]. It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate Bragg's teaching into Sanderson's method for the purpose of sharing with other autonomous systems a common view of addressing and routing by exchanging network level reachability information (NLRI, encoded as address prefixes), thereby routing between autonomous systems is established and maintained [col. 1, lines 28-33].

13. Claims 10, 21, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson as applied to claim 1, and in view of AAPA.

Regarding claims 10, 21, and 32, Sanderson discloses the claimed invention except for the VPLS and Ethernet. AAPA teaches L2 service using the Virtual Private LAN Service [para. 0004] and L2 communications using Ethernet communications [para. 0004, lines 4-5]. It would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate

AAPA's teaching into Sanderson's method for the purpose of sharing with other data services such as other virtual private networks or public data services by using the Virtual Private LAN Service for L2 service, thereby achieving the connectivity of a private network without having to own and operate its own network infrastructure over a wide geographic region [para. 0003]. It also would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate AAPA's teaching into Sanderson's method for the purpose of using a proven technology by using the Ethernet communications for L2 communications, thereby reducing the risk of trying new technologies.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant must show how the amendments avoid such references and objections. See 37 CFR 1.111(c).
15. Luo, US 2005/0044262 A1, has taught a system and method for interconnecting heterogeneous layer 2 VPN applications.

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and

are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Lai whose telephone number is (571) 270-3236. The examiner can normally be reached on M-F 8:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

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Michael C. Lai
16JUN2008

/Yves Dalencourt/
Primary Examiner, Art Unit 2157